Lecture 3: Cascading Style Sheets (CSS)

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Cascading Style Sheets

Style sheets separate content from presentation

- **What can it do?**
  - Allow authors and users to attach style to structured documents

- **Why?**
  - Simplifies Web authoring and site maintenance

- **How?**
  - Separate presentation style from content
Publishing with CSS

Web Browser

CSS Style Sheet

HTML Document

Appearance

Wilde's WWW
Erik Wilde

This book gives through up to the minute descriptions of all recent WWW developments. It includes the latest versions of the popular standard HTTP/11 and standard languages HTML, 4.0, 4.1, and the evolving standard XML. Web servers and clients (CSS) are included with these SGML and CSS standards as examples of Web servers, and a descripion of technologies that will be of even more importance in the future, such as XML, VRML and VRML. The various techniques for dynamic documents can be created using SVG, and are then translated into HTML documents.
Attaching Style to Content

- Embedded Style Sheet: `STYLE` element

```html
<HEAD> ...

  <STYLE type="text/css">
      H1 { color: blue; font-size: 48pt }
      P { font-size: 32pt }
  </STYLE>

</HEAD>
```
Attaching Style to Content (2)

- External Style Sheets: `<LINK element`

```html
<HEAD> ...
 <LINK rel="stylesheet" href="LINK-Element.css" type="text/css">
 ... 
</HEAD>
```
Basics of CSS

• A Style Sheet:
  - A set of rules which apply to an HTML document

• Each rule consists of two parts:
  - Selector
  - Declaration

P { color: green }
CSS Rules’ Inheritance

The rules specify which style declarations to be applied to which items in a document tree.
Assignment 1

Create a dummy HTML page using Style Sheets.

Hints: Download the 1st example files and from the HTML file eliminate the Style related elements (move them into the .css file and add a reference to this file). Then change the property values in the style sheet file and observe the impact on the appearance of the HTML file.
Selectors

• Type or Element selectors
  - refer to elements and some relationships between them

• Attribute selectors
  - refer to element attributes and their values

• Contextual selectors
  - refer to contextual relationship

• External selectors
  - selection should be made on external information

• Special selectors
  - define new elements with formatting semantics
Type/Element Selectors

• Selects an Element according to its Type
  - Pattern: E or E1 + E2 or *, etc.

    P { color: green }
    or

    H1 { color: yellow }

• It’s possible to use a grouping mechanism

    H1, H2, H3 { color: yellow }
Attribute Selectors

• **Simple** attribute selectors
  - Pattern: [Attr] or E[Attr]

• **Attribute value** selectors
  - Pattern: [Attr="val"] or E[Attr="val"]

• **Special** attributes
  - **Class** selector: .Class or E.Class
  - **ID** selector: #ID or E#ID

• **Examples**
  - See Assignment 2
**Contextual Selectors**

- Uses Simple selectors (Type or Attribute) to specify a *contextual* relationship
  - Pattern: E1 E2 …

```
LI P { margin-top: 0mm }
```

or

```
TABLE .SMALL P { font-size: small }
```
External Selectors

• Selection should be made on external information
• Pseudo Classes
  - Link Pseudo Classes
    • Pattern: :link|E:link or :active|E:active or :visited|E:visited

  **A:link** { color: green }

• Pseudo Elements
  - First Letter, First Line
    • Pattern: :first-letter|E:first-letter or :first-line|E:first-line

  **P:first-letter** { font-size: 200% }
Special Selectors

• Defines new elements with formatting semantics in HTML
• Block-level element
  - Pattern: `<DIV class|id='value'> ... </DIV>`
• Inline element
  - Pattern: `<SPAN class|id='value'> ... </SPAN>`
• Examples
  - See Assignment 2
Declaration Block

• Binds a value to a CSS **property**
• **Consists of a property name**, followed by a **colon**, followed by a **property value**
  - Selector `{ Property1: Value1; Property2: Value2 }`

• Property names:
  - [http://www.blooberry.com/indexdot/css/propindex/all.htm](http://www.blooberry.com/indexdot/css/propindex/all.htm)

• Values
  - Numbers (absolute, relative)
  - Percentage
  - Predefined aliases (e.g., small, bold, left, etc.)
Assignment 2

Study the files of example 2 then extend them to create an own HTML page using Style Sheets.

Hints: - Use the on-line references given on the next slide.
- Change the formatting style given in the example files.
- Design an own Style Sheet and create an own HTML page based on this sheet using different headers, paragraphs, list elements, etc...
Further Information

• **CSS Home Page**
  - [http://www.w3.org/Style/CSS/](http://www.w3.org/Style/CSS/)

• **CSS2 Specification**
  - [http://www.w3.org/TR/REC-CSS2/](http://www.w3.org/TR/REC-CSS2/)

• **CSS On-line Tutorials**
  - [http://www.w3.org/Style/CSS/learning](http://www.w3.org/Style/CSS/learning)

• **CSS Tutorial (in German)**
  - [http://selfhtml.teamone.de/css/](http://selfhtml.teamone.de/css/)